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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/501,978

02/02/2005

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Q81601

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EXAMINER

HU, HENRY S

ART UNIT

PAPER NUMBER

1713

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/08/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/501,978	<b>Applicant(s)</b> KONO ET AL.	
	<b>Examiner</b> Henry S. Hu	<b>Art Unit</b> 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on Election of December 7, 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 9-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 15-17 is/are rejected.
- 7) ☒ Claim(s) 1 and 7 is/are objected to.
- 8) ☒ Claim(s) 1-17 are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>3 pages</u> . | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This application 10/501,978 is a CIP of 10/046,702, now US Patent No. 6,743,508.

This Office Action is in response to **Election** filed on December 15, 2006. Applicants have elected **without traverse** for **Group I (Claims 1-8 and 15-17)**. **Claims 1-17 are now pending** with a total of **two** independent claims (Claim 1 and Claim 9), while nonelected Claims 9-14 (Group II) are withdrawn from consideration. An action follows.

### *Specification*

2. The disclosure is objected to because of the following informalities:

On **page 21** at line 3, the use of “  $((SD - OD) / OD) \cdot 100$ ” in the equation for Die Swell is wrong according to traditional wording. A correction to “  $((SD - OD) / OD) \times 100$ ” may be needed.

Appropriate correction is required.

### *Claim Objections*

3. Claims 1 and 7 objected to because of the following informalities:

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(a) On **Claim 1** at line 1, recitation "a volatile content index of 0.2 % by weight or less" is better to be changed to "a volatile content index of 0.2 % by weight or less after 370 °C/30 minutes" as defined on page 19 at line 35. The temperature and time are critical. Otherwise, it may be confusing to the ordinary skill in the art.

(b) On **Claim 7** at line 3, recitation of "hexafluoro-propylene" may be changed to "**hexafluoropropylene**" for HFP monomer according to traditional wording.

### ***Double Patenting***

4. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

5. **Claims 1, 5-8 and 15-17 are rejected under 35 U.S.C. 101 as claiming the same invention as that of Claims 1-11 of US Patent No. 6,743,508 B2 to Kono et al. (with application # 10/046,702 and a priority date 1-17-2002).** This is a double patenting rejection since the conflicting claims have in fact been patented.

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6. **Parent Claim 1 and its dependent Claims 5-8 and 15-17** of present invention relate to **an FEP pellet** having a volatile content of 0.2 % by weight or less, wherein said FEP pellet satisfies the following two requirements when used to form an insulating material coating a core wire by extrusion coating at a coating speed of 2,800 ft/min.: (i) an adhesive strength between said insulating material and said core wire of 0.8 kg or more; and (ii) an average number of cone-breaks in said insulating material of one or less per 50,000 ft of the coated core wire.

As discussed above, current application is a **CIP** case and is rewritten from its original and allowed claims. In comparing current Claims 1, 5-8 and 15-17 with Claims 1-11 of its parent allowed case, **all corresponding claims are found by this examiner to be exactly the same.** Therefore, **this Application needs to be amended or abandoned according to MPEP.**

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

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8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. The limitation of parent **Claim 1** relates to ***an FEP pellet having a volatile content of 0.2 % by weight or less, wherein said FEP pellet satisfies the following two requirements when used to form an insulating material coating a core wire by extrusion coating at a coating speed of 2,800 ft/min.: (i) an adhesive strength between said insulating material and said core wire of 0.8 kg or more; and (ii) an average number of cone-breaks in said insulating material of one or less per 50,000 ft of the coated core wire.***

*See other limitations of dependent Claims 2-8 and 15-17.*

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10. Claims 1, 5-8 and 15-17 are rejected under 35 U.S.C. **102(b)** as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over each of **four references including Nakagawa et al. (US 4,703,095), Chu et al. (US 5,317,061), Punderson (US 4,150,013) and Blair (US 5,703,185).**

Regarding the limitation of parent **Claim 1**, each of **four** references including **Nakagawa, Chu, Punderson and Blair** has individually disclosed a fluorine-containing terpolymer (**FEP**) in the form of **pellet** obtained from **tetrafluoroethylene, hexafluoropropylene and perfluoro(alkyl vinyl ether)** can be effectively and conveniently extruded. For instance, with improved stress crack resistance and flex resistance (see Nakagawa at abstract, line 13-15), FEP with perfluoro(propyl vinyl ether) can be extruded at higher rates than corresponding copolymers containing perfluoro(propyl vinyl ether) (see Blair at abstract, line 1-4).

With respect to **PEP in the pellet form**, please see **Nakagawa** at column 5, line 63 for “FEP pellet”, see **Chu** at column 8, line 58 and column 10, line 30 for “FEP pellet”, and see **Punderson** at column 9, line 25 and 59 as well as column 12, line 60 for “FEP pellet”. With respect to **the use of FEP polymer in wire coating**, Blair (185) specifically discloses that the terpolymer of TFE/HFP/PEVE can be used for **extruding and melt-drawing to form insulation on an electrical conductor** (column 2, line 2-5) so that such a terpolymer can be extruded at high rate without melt fracture (column 2, line 12-24).

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11. Each of four references has more or less disclosed some performance properties for using FEP terpolymer. For instance, Blair discloses that **such terpolymers have melting point range of 243-253 °C, melt viscosity range of  $0.5-50 \times 10^3$  Pa.s., and MIT Flex Life of 5150-15400 cycles to break** (column 2, line 63-64; column 5, line 46-67). Blair also discloses that the above copolymers are able to be extruded or melt fabricable (column 1, line 19-20) at higher rate, however, the products exhibit no melt fracture (column 2, line 20-23) and have good flex life. The examiner thereby believes that less stress has been built-up from above process may indicate a high stress relaxation. Therefore, each reference is silent with respect to the claimed adhesive strength, volatile content index, and cone break number **so as to be useful in insulating a core wire**. In light of the fact that the prior art and the present invention recite **substantially identical composition in FEP terpolymers of TFE/PAVE/HFP and may be polymerized in the same process**, a reasonable basis exists to believe that the products of the invention inherently possess the same properties. Since the PTO cannot perform experiments, the burden is shifted to the applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP 2112-2112.02.

It has been held that where applicant claims a composition in terms of function, property or characteristic where said function is not explicitly shown by the reference and where the examiner has explained why the function, property or characteristic is considered inherent in the prior art, it is appropriate for the examiner to make a rejection under both the applicable section of 35 USC 102 and 35 USC 103 such that the burden is placed upon the applicant to provide clear evidence that the respective compositions do in fact differ. *In re Best*, 195 USPQ 430, 433 (CCPA 1977); *In re Fitzgerald et al.*, 205 USPQ 594, 596 (CCPA 1980).



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12. Regarding the rejection of **Claims 5-8 and Claims 15-17**, the same rationale for the rejection above for Claim 1 can be applied here since Claims 5-8 and Claims 15-17 are related to inherent properties when it is used in wire coating.

13. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over each of four references including Nakagawa et al. (US 4,703,095), Chu et al. (US 5,317,061), Punderson (US 4,150,013) and Blair (US 5,703,185), each individually in view of Araki et al. (US 6,479,578 B2) or Tsuda et al. (US 6,900,287 B1).

The above discussion of the disclosures of the prior art of four references including Nakagawa, Chu, Punderson and Blair for Claims 1, 5-8 and 15-17 of this office action is incorporated here by reference. Regarding dependent **Claims 2-4**, each of Nakagawa, Chu, Punderson and Blair is silent about incorporating some functional groups inside the FEP polymer so as to be useful as adhesion terminus. Each of Araki and Tsuda teaches that individually. See Araki at column 7, line 15 – column 8, line 8; abstract, line 10-15; and see Tsuda at abstract, line 1-3; column 2, line 52 – column 3, line 24. By doing so, it will **enhance adhesion to various substrates** as well as also **improve interface adhesion with filler and/or other resin** in the same composition (see Tsuda at column 2, line 52-58; see Araki at column 1, line 8-16).

14. In light of the fact that involving references are dealing with the same or similar type of perfluorinated copolymers such as FEP as well as both are useful for the same extrusion or

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molding application, one having ordinary skill in the art would have therefore found it obvious to modify each reference's terpolymer obtained from the polymerization by subjecting it with some process so as to incorporate the claimed functional group(s) in the FEP polymer as taught by Araki or Tsuda. By doing so, a better FEP extrusion or molding material will be effectively obtained since the existence of functional groups will enhance adhesion to various substrates and also improve interface adhesion with filler and/or other resin in the same composition. Therefore, better, durable and more diversified product may be thereby obtained.

### ***Conclusion***

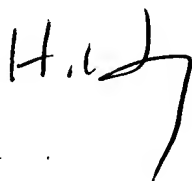
15. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. The following references relate to an FEP pellet having a volatile content of 0.2 % by weight or less when it is used to form an insulating material coating a core wire by extrusion coating at a coating speed of 2,800 ft/min: **US Patent No. 4,749,752 to Youlu et al.** only discloses the preparation of fluoropolymer alloys made of melt-fabricatable copolymer of TFE/HFP and polytetrafluoroethylene (abstract, line 1-6). However, Youlu et al. fail to teach the present invention since the PAVE is not included to be FEP polymer. Additionally, no functional group(s) is disclosed or suggested in fluoropolymer.

**US 2001/0006727 to Lee et al.** only discloses that a melt processible fluoropolymer composite containing **functionalized** fluoropolymer is reinforced with fibrous liquid-crystal

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polymer (abstract, line 1-2). However, Lee et al. fail to teach using the claimed terpolymer of TFE/HFP/PFAVE.

16. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Dr. Henry S. Hu whose telephone number is (571) 272-1103**. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The fax number for the organization where this application or proceeding is assigned is **(571) 273-8300** for all regular communications. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Henry S. Hu

Patent Examiner, Art Unit 1713, USPTO

February 3, 2007



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